Rec 8/25/80 E.5
Form 5-16-80

STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION
JACOB A. HOEFER
CARL T. JOHNSON
E.M. LAITALA
HILARY F. SNELL
HARRY H. WHITELEY
JOAN L. WOLFE
CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor

STEVENS T. MASON BUILDING
BOX 30028
LANSING MI 48909

DEPARTMENT OF NATURAL RESOURCES

HOWARD A. TANNER, Director

August 11, 1980

US EPA RECORDS CENTER REGION 5
461017

Inspector Vincent Howard
Elyria Fire Department
40 Cedar Street
Elyria, Ohio 44035

Dear Mr. Howard:

Attached as per your request is our settlement of the Chemical Recovery Systems, Inc., Romulus case.

Leon Acierto, U.S. EPA Enforcement Division (312-886-6766), recently informed me they would be filing suit in the near future regarding the Elyria site. I hope you will then get your desired results at that site.

If you should have any further information on their Michigan operations or any other questions, please feel free to contact me.

Sincerely,

David M. Rymph
Enforcement Investigator
Criminal Investigative Section
Environmental Enforcement Division

DMR:dr

cc: W. Busby

MICHIGAN
THE GREAT LAKE STATE

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF WAYNE

FRANK J. KELLEY, Attorney General for the State of Michigan, FRANK J. KELLEY, ex rel MICHIGAN NATURAL RESOURCES COMMISSION, MICHIGAN WATER RESOURCES COMMISSION and HOWARD A. TANNER, Director of the Michigan Department of Natural Resources,

Plaintiffs,

v.

CHEMICAL RECOVERY SYSTEMS, INC., a Michigan Corporation, M.S.&N. CORPORATION, a Michigan Corporation, NOLWOOD CHEMICAL CORPORATION, a Michigan Corporation, EDWARD W. LAWRENCE, a Michigan Resident, A.H. MAGNUS, JR., a Michigan Resident, ARTHUR B. McWOOD, JR., a Michigan Resident, CHARLES H. NOLTON, a Michigan Resident, and PETER J. SHAGENA, a Michigan Resident,

Defendants and Third-Party Plaintiffs,

v.

PRODUCTS-SOL, INC., a Michigan Corporation, WAYNE COUNTY DRAIN COMMISSION, WAYNE COUNTY DEPARTMENT OF HEALTH, and CITY OF ROMULUS,

Third-Party Defendants.

Civil Action No. 79-929-190-CE

Honorable Maureen P. Rei
P 19327

STIPULATION AND CONSENT JUDGMENT

STIPULATION

Plaintiffs, Frank J. Kelley, Attorney General for the State of Michigan, Frank J. Kelley, ex rel Michigan Natural Resources Commission, Michigan Water Resources Commission and Howard A. Tanner, Director of the Michigan Department of Natural Resources, by and through their attorneys, Stewart H. Freeman and Roger A. Schwartz, Assistant Attorneys General,

Dave Dennis
6/13/80
cc/ note to trial conference

and the Defendants, Chemical Recovery Systems, Inc., M.S. & N. Corporation, Nolwood Chemical Corporation, Arthur B. McWood, Jr., Charles H. Nolton, and Peter J. Shagena, by and through their attorneys, Murphy, Burns & McInerney, P.C., HEREBY AGREE AND STIPULATE to the following:

1. The Plaintiffs recognize that Defendant purchased the property in a contaminated condition and that the origin of the contaminated condition of the property was due to Defendant's predecessors in title.

2. Plaintiffs and Defendants agree that the Plaintiffs, upon entry of the CONSENT JUDGMENT, will at no time seek further relief from any of Defendants' predecessors in title.

3. The Plaintiffs and Defendant agree that the cause of action against all Defendants except Chemical Recovery Systems, Inc. be dismissed with prejudice and without costs upon entry of a CONSENT JUDGMENT which provides as follows:

CONSENT JUDGMENT

At a Session of Said Court, held in the Courtroom thereof in the City of Detroit, County of Wayne, State of Michigan, held on the _____ day of MAY 16 1980, 1980.

PRESENT: Honorable MAUREEN D. REILLY
Circuit Judge

The parties having STIPULATED and AGREED that a Judgment may be entered in this cause, incorporating the following terms and conditions, and the Court being fully advised in the premises and having determined, from a review of the matters before the Court, that the terms and conditions contained herein are reasonable, adequately resolve the environmental issues raised in this action, constitute a

full restorative program for eliminating any threat to the air, lands, and waters of this State, and properly protect the interests of the People and the State of Michigan, this Court hereby adopts said terms and conditions, and

NOW, THEREFORE, IT IS ORDERED AND ADJUDGED, that:

(1) EXCAVATION AND REMOVAL OF PONDS

The Defendant, Chemical Recovery Systems, Inc., shall remove and transport contaminated soils and sludges from Defendant's property located at 36345 Van Born Road, Romulus, Michigan, (hereafter, Defendant's property) as follows:

A. Approximately 15,000 cubic yards of contaminated soils and sludges from the areas identified by the attached site plan, attached hereto as Exhibit A, and commonly referred to as the "Vinyl Pond" and "East Pond", located on the Defendant's property and identified on the attached site plan in red;

B. The area commonly referred to as the "East Pond" shall be excavated and the contaminated soils and sludges therein removed from Defendant's property no later than June 1, 1980, such excavation comprising approximat 3,000 cubic yards of material; and

C. The area commonly referred to as the "Vinyl Pond" shall be excavated and the contaminated soils and sludges therein removed from Defendant's property no later than June 1, 1981, such excavation from Defendant's property comprising approximately 12,000 cubic yards of material.

D. The disposal by Defendant shall be in a Department of Natural Resources (DNR) approved landfill and shall be disposed of in a manner or fashion approved by the

DNR. The DNR shall assist Defendant in obtaining any and all permits and/or permissions required to be obtained in order to fulfill its responsibilities under this Order. In addition, the DNR will cooperate with the Defendant and assist the Defendant in obtaining approvals under 1979 PA 64 for the transportation of the contaminated soils and sludges from Defendant's property to the approved landfill.

E. Defendant shall, within sixty (60) days of the completion of the excavation operation, backfill the excavated areas with clean fill in a manner approved by the DNR.

F. The Plaintiffs shall waive any state levied surcharge, tax, or other expense under 1979 PA 64 or any other governmental power, rule or regulation, which gives the Plaintiffs the power to assess such a charge for disposal of hazardous waste, based on proof of an existing contract, attached hereto as Exhibit B, between the Defendant and the approved landfill prior to the promulgation of the administrative rules implementing 1979 PA 64.

(2) RESTORATION OF PROPER GRADE OF PROPERTY

Defendant shall, by September 30, 1981, re-grade and seed the surface of Defendant's property in a manner which will assure that all surface water is routed off Defendant's property in a condition typical of normal surface run-off.

(3) TROUTON DRAIN RESTORATION

Defendant shall pay Ten Thousand Dollars ($10,000.00) to the State of Michigan, payable to the Department of Natural Resources - Water Cleaning Emergency Fund, as reimbursement for the DNR's removal and disposal of contaminated sediments in Trouton Drain from Van Born Road to Joan Road. The Defendant shall forward the $10,000 to the DNR Water Cleaning Emergency Fund on or before June 1, 1980, or within thirty (30) days after completion, whichever date is later. The implementation of the restoration operation shall be the sole responsibility of the DNR, and Defendant, is relieved of any responsibility, liability, and/or damage which may result during the sediment removal operation. Further, Plaintiffs and Defendant agree that after proper construction of the slurry trench, as hereinafter provided, Plaintiffs will not seek enclosure of the Trouton Drain. DNR's restoration of Trouton Drain, from Van Born Road to Joan Road, including the removal of contaminated sediments and the abatement of any existing chemical contamination of the drain, shall eliminate any air or water pollution, and nuisance or inconvenience to the residents and citizens of the City of Romulus, County of Wayne, caused by chemical contamination emanating from Defendant's property due to the past operations of Defendant or its predecessors.

(4) INTERCEPT EVALUATION AND CORRECTION

Defendant shall immediately retain a professional groundwater consultant to evaluate the groundwater intercept tile system located on Defendant's property. The professional groundwater consultant shall, by March 15, 1980, submit for DNR approval a complete evaluation of the groundwater intercept tile system and a satisfactory corrective program. By no

later than May 1, 1980, Defendant shall complete the DNR-approved corrective modifications of the groundwater intercept tile system. The professional groundwater consultant's evaluation must prevent any further migration of contaminated groundwater into the Trouton Drain and assure that all contaminated groundwater flows to and is collected by the groundwater intercept tile and disposed of in a manner approved by the DNR. Said evaluation and modification plan from Keck Consulting Services, Inc., not yet approved by the DNR, is attached hereto as Exhibit C.

(5) SLURRY TRENCH

Defendant shall install a slurry trench starting from approximately 235 feet east of the office and lab building located on Defendant's property and continuing east for approximately 60 feet to a point 15 feet within the fence line, then south 1,000 feet, plus or minus, and then west 440 feet, for a total of approximately 1500 lineal feet of slurry trench. The slurry trench shall tie into the clay approximately one foot and shall be designed to have an average depth of approximately 13 feet. The slurry trench shall be installed using either the vibrator beam or trencher method and a special slurry mix shall be utilized to reach a permeability of K=1 x 10-7 cm per second. The material to be used must be compatible with the type of wastes underlying Defendant's property. Defendant shall supply a sample of the contaminated water and soil to the contractor to evaluate such compatability. The results of this evaluation and the contractor's choice of material and design shall be submitted to and approved by the DNR prior to installation. Construction of the slurry trench shall be completed on or before June 1, 1980. A letter representing a preliminary evaluation by Defendants' consultants is attached hereto as Exhibit D.

(6) DRUM STORAGE

Defendant shall reduce and maintain the number of drums stored on Defendant's property at any one time to a

figure not to exceed a total of 6,000 drums; this reduction shall take place by November 30, 1980.

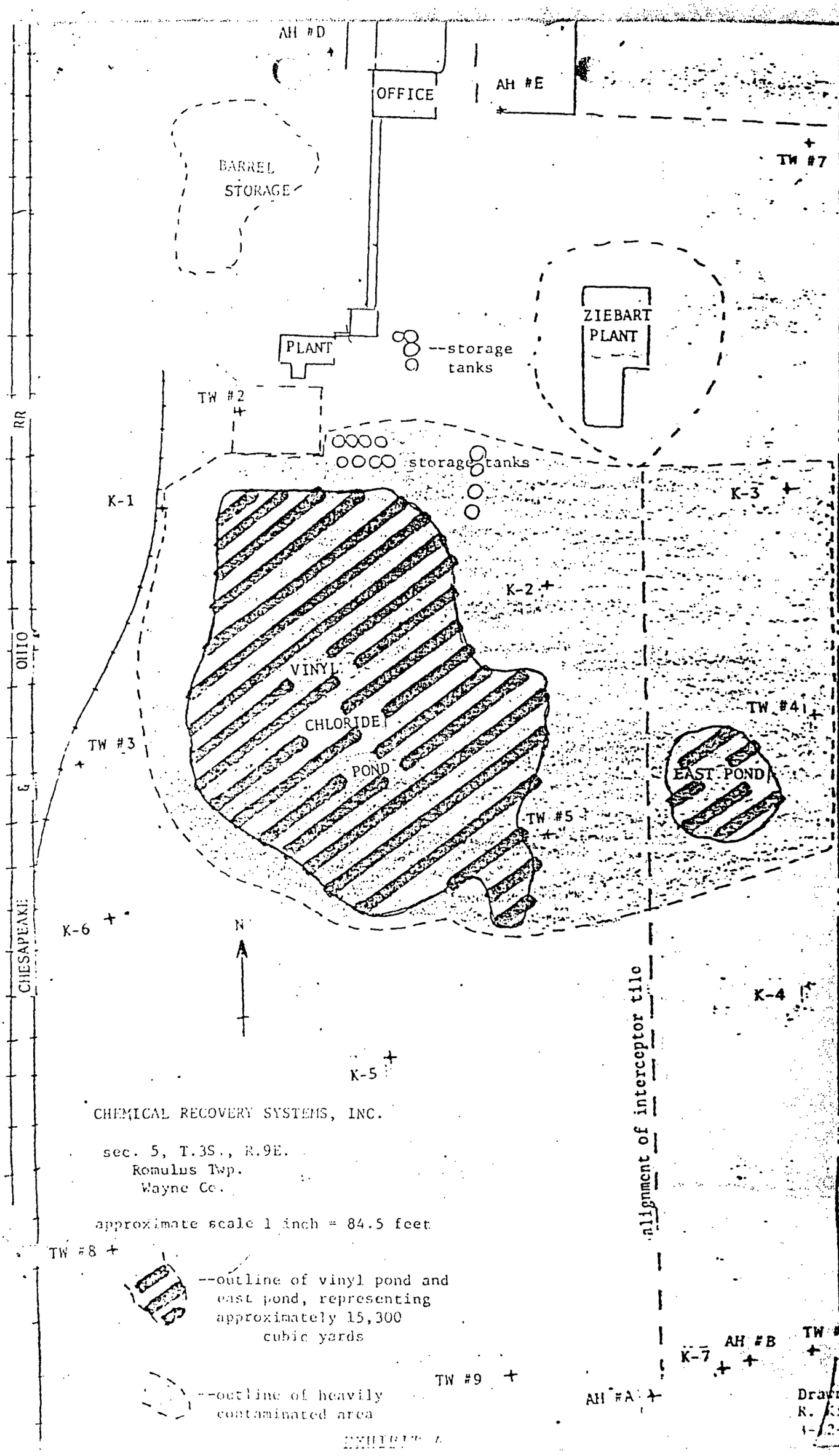
(7) SECONDARY CONTAINMENT

Defendant shall install secondary containment for all storage areas located on Defendant's property, including the bulk storage area, the drum storage area, and the loading and unloading areas. The Defendant shall construct the containment, including diking of storage areas, so as to prevent any significant run-off of materials contained therein, to prevent spilling upon the ground of those materials, and to prevent those materials from otherwise directly or indirectly entering into the groundwater or leaving the premises of Defendant. The construction of any additional secondary containment under this paragraph shall be completed by November 30, 1980.

(8) MAINTENANCE AGREEMENT AND RESTRICTIVE COVENANT

Defendant represents to the Court that the title to the property located at 36345 Van Born Road, Romulus Township, Wayne County, Michigan, has been deeded to Defendant from M.S. & N. Corporation. Further, Defendant shall maintain the groundwater intercept tile in such a fashion as to assure that contaminated groundwater flows to and is collected by the groundwater intercept tile. Defendant shall, in addition, maintain the slurry trench in such a fashion as to provide for containment of groundwater on Defendant's property.

Defendant shall execute and deliver to the State of Michigan a document in recordable form (to be recorded, and to be filed with the Register of Deeds of Wayne County



CHEMICAL RECOVERY SYSTEMS, INC.

sec. 5, T.3S., R.9E.
Romulus Twp.
Wayne Co.

approximate scale 1 inch = 84.5 feet

Drawn by
R. Kimm
4-12-80

EXHIBIT A

AGREEMENT

THIS AGREEMENT is made this 3rd day of March, 1980, by and between CHEMICAL RECOVERY SYSTEMS, INC., party of the first part, hereinafter known as "Chemical Recovery", and WAYNE DISPOSAL, INC., party of the second part, hereinafter known as "Wayne Disposal";

WITNESSETH:

WHEREAS, Chemical Recovery desires to dispose of certain contaminated soils and sludges; and.

WHEREAS, Wayne Disposal wishes to contract with Chemical Recovery to properly dispose of said soils;

NOW THEREFORE and in consideration of the following, the parties hereto agree as follows:

(1) Chemical Recovery, commencing March 1, 1980 and continuing until September 1, 1981, will transport and Wayne Disposal will accept the contaminated soils and sludges.

(2) That it will be the responsibility of Chemical Recovery to transport soils and sludges to the location owned and occupied by Wayne Disposal located in the City of Belleville, County of Wayne, State of Michigan.

(3) That Wayne Disposal will obtain any and all permits required by the County of Wayne or the State of Michigan.

(4) The parties hereto agree that they have entered specific contractual terms concerning the consideration and that all funds will be forwarded to Wayne Disposal by Chemical

Recovery Systems as certified funds on a periodic basis throughout the term of this agreement.

CHEMICAL RECOVERY SYSTEMS, INC.

By _____

Its _____

WAYNE DISPOSAL, INC.

By _____

Its _____

KECK consulting services, inc.

4903 DAWN AVE · EAST LANSING, MI 48823 · (517) 332-8623

March 5, 1980

Mr. Peter Shagena
Chemical Recovery System, Inc.
36345 Van Born Road
Romulus, Michigan 48174

Underdrain Evaluation
Chemical Recovery Systems, Inc.
Romulus Township
Wayne County, Michigan

Figures:

1. Water Table Contour Map without Underdrain Sump Effect
2. Water Table Contour Map with Underdrain Sump Effect

Appendices:

1. Soil Boring Logs
2. Elevational Data

EXHIBIT C

GENERAL

Chemical Recovery Systems, Inc. has retained Keck Consulting Services, Inc. to determine the effectiveness of an underdrain system installed for the purpose of intercepting groundwater migrating toward Troutman Drain (see Figure 1). The investigation has been completed and the results are presented in this report.

SCOPE OF INVESTIGATION

Four new soil borings/monitor wells were installed as part of the investigation. The soil boring logs show the surficial sand layer to be between 8.5 and 13 ft. thick underlain by clay-till (see Appendix 1). The monitor wells were installed using 2-inch galvanized pipe and 2-inch x 24-inch #7 slot stainless steel well screens. The well screens were set just above the sand/clay-till interface and developed with compressed air (jetting). Air jetting was also used in an attempt to re-develop the seven monitor wells installed during December, 1975. Data on those wells was presented in a report dated January 16, 1979. All wells were allowed to recover for a minimum of 24 hours after which static water levels were measured and recorded. The ground and top-of-casing elevations were then surveyed after which relative water table elevations were calculated (see Appendix 2).

RESULTS AND CONCLUSIONS

The elevational data was used to construct the relative water table contour maps presented as Figures 1 and 2. A general comparison of the elevational data shows that the water table has declined from 3 to 40 ft. across the site. Correspondingly, the gradient across the site (approximately 1400 ft.) has declined from about 7 ft./1400 ft. to 3 ft./1400 ft. The exact cause(s) of the decline has not been determined but weather conditions and the underdrain system must play some role. Note that the data from the previously installed wells 3 and 4 has not been used since the readings appear anomalous.

Figure 1 shows the groundwater flow pattern excluding the water level reading in the underdrain sump. The flow pattern is similar to that in effect in 1975; a general west to east movement.

Figure 2 shows the plow pattern including the underdrain sump influence. The influence appears local in nature while the underdrain itself has little current effect.

A review of the underdrain construction details indicates that the invert at the drain's north end roughly approximates the elevation of the sand/clay interface. Thus, the slope of the underdrain would result in the invert being above the clay/sand interface toward the south. This situation could allow for

underflow and continued movement toward the Troutman Drain. The concept also correlates with the lowering of the water table in the area. Only when recharge results in a rise in the water table above the tile invert will the underdrain have any effect. This situation is supported by the reported intermittent pumping from the underdrain sump.

RECOMMENDATIONS

Based on the available data, we feel that the underdrain system has had some effect in controlling groundwater movement toward the Troutman Drain. The effectiveness of the system could be increased by re-designing such that the invert elevation at the south end of the property equals the clay/sand interface. Trenching into the clay would be required as the underdrain installation proceeded to the north. The trench should then be backfilled around the underdrain and to a uniform depth approximately three (3) ft. above the clay/sand interface with pea gravel. The trench/underdrain system should extend to the northern limit of the former barrel storage area and discharge into a large sump. Pumpage from the sump would be to the minicipal sanitary sewer system. It is our opinion that this underdrain/trench system together with the proposed slurry wall to be installed along Troutman Drain and a portion of the north and south property lines will effectively prevent any groundwater movement from the property to the Troutman Drain.

Should there be any questions regarding this report or the project in general, please contact our office.

Respectfully submitited,

KECK CONSULTING SERVICES, INC.

Robert C. Minning, CPG
President

KEI : CONSULTING SERVICES, INC.
"Ground Water Specialists"
4903 Dawn Avenue • East Lansing, Michigan 48823 • (517) 332-8623

SOIL BORING DATA

JOB NUMBER 909 DATE February 7, 1980

OWNER Chemical Recovery Systems

LOCATION: State Michigan County Wayne Twp. Romulus

Section 5 T. 3 S.; R. 9 E.

MINERAL WELL PERMIT NUMBER: 051-862-482

AUGER: 4-inch ☒ 6-inch ☐ Profile ☐ Split-spoon ☐

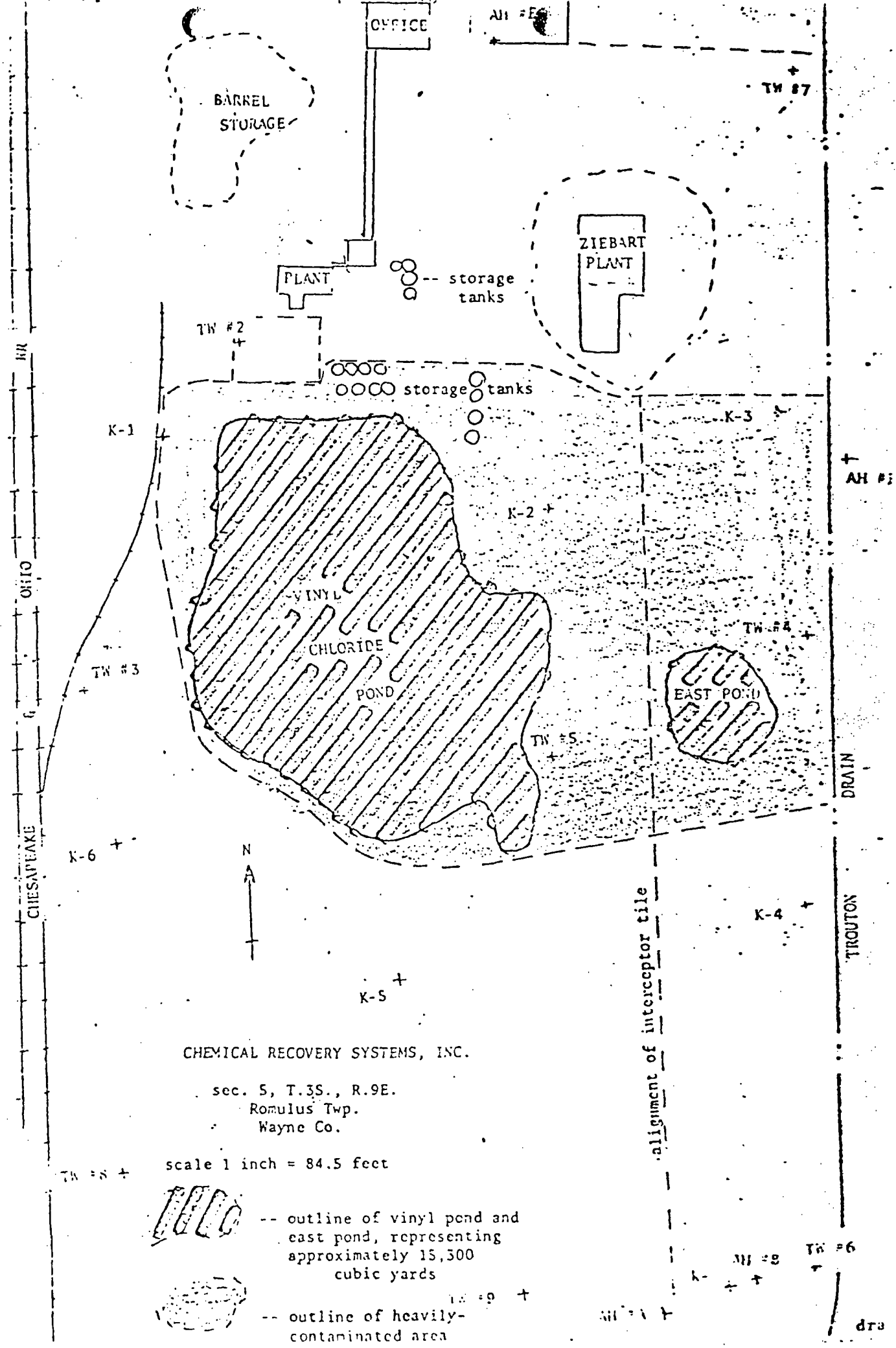
PLUGGING METHOD: ☒ Natural Materials
☒ Bentonite
☐ Cement

Geologist C. Stagg/K. Wiley Field Ass't

BORING NUMBER OW-2 TOTAL DEPTH 12' S.W.L.(BGL) 3.40

Sample Number	From to Feet	Lithologic Description
	0 - 4	FILL: cement, stone, sand, rubbel
1	4 - 9	SAND: med-fine, grey, strong odor
2	9 - 12	CLAY TILL: tight, grey
		Screened from 7-9'
		Sealed with bentonite

Piezometer: ☐ Screen 924-7 Pipe 10' Total Depth (BGL) 9'



CHEMICAL RECOVERY SYSTEMS, INC.

sec. 5, T.3S., R.9E.
Romulus Twp.
Wayne Co.

scale 1 inch = 84.5 feet

-- outline of vinyl pond and east pond, representing approximately 15,300 cubic yards

-- outline of heavily-contaminated area

JOB NUMBER 909 DATE February 7, 1980 PAGE 2

BORING NUMBER GW-4 West TOTAL DEPTH 15' S.W.L.(BGL) _____

Sample Number	From to Feet	Lithologic Description
	0 - 3	FILL: cement, clay & sand
1	3 - 13	SAND: fine w/silt, black-grey, strong odor, sat.
	13 - 15	CLAY TILL: tight, grey, no sample
		Screened from 11-13'
		Sealed with bentonite

Piezometer: ☐ Screen 924-7 Pipe 14' Total Depth (BGL) _____

BORING NUMBER GW-4 South TOTAL DEPTH 10' S.W.L(BGL) _____

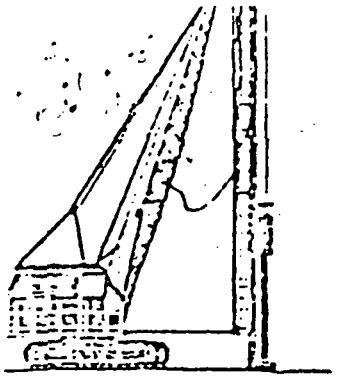
Sample Number	From to Feet	Lithologic Description
1	0 - 2	SAND: high organics, silt, black, moist
2	2 - 8.5	SAND: med.-fn, strong odor black, sat.
	8.5 - 10	CLAY TILL
		Screened from 6.5 - 8.5
		Sealed with bentonite

Piezometer: ☐ Screen 924-7 Pipe 10' Total Depth (BGL) _____

BORING NUMBER GW-3b TOTAL DEPTH 10' S.W.L.(BGL) _____

Sample Number	From to Feet	Lithologic Description
1	0 - 2	SANDY ORGANICS: grey, moist
2	2 - 8.5	SAND: fn.-silt, grey, strong odor, sat
3	8.5 - 10	CLAY TILL
		Screened from 6.5 - 8.5

Piezometer: ☐ Screen 924-7 Pipe 10' Total Depth (BGL) _____



Slurry Systems

CONTRACTORS & CONSULTANTS

a division of Thatcher Engineering Corporation

February 29, 1980

Chemical Recovery Systems, Inc.
36345 VanBorn Road
Romulus, Michigan 48174

Attn: Mr. Pete Shagena

Dear Sir:

We have completed extensive testing of different combinations of bentonite-base slurries in our lab against the samples of polutants you supplied us and found out that reactiveness of the chemicals with bentonite is so severe that bentonite slurries are not capable to satisfy desired impermeability factor.

For the last two weeks, cold asphalt emulsion slurries were being tested against the 'worst' solution you mailed us and results show that this type of slurry is satisfactory for K = 1X10 -7 cm/sec. or less impermeability criteria.

We would install the slurry wall and supply all labor, equipment, materials (except cold asphalt emulsion) mob and demob for the construction of the slurry wall using the vibrated beam method, for the sum of $65,520.00 or $3.36/sq.ft.. This figure is based on installing 19,500 sq.ft. and the availability of a 50 ton crane in the Detroit area suitable for our work.

As it was mentioned in the previous letter, the ground has to be firm and level in the slurry wall area around the perimeter, also exact location of underground piping should be exposed prior to slurry wall construction.

Any downtime due to site conditions or problems connected directly with site conditions will be charged at an hourly rate of $375.00 per hour.

Trusting this proposal will meet with your approval.

Sincerely,

SLURRY SYSTEMS DIVISION

Frank Zlamal dl

Frank Zlamal
Manager of Technical Services

FZ/dl
cc: Gary McInerney

EXHIBIT D